ARGENTINA

Science and Technology

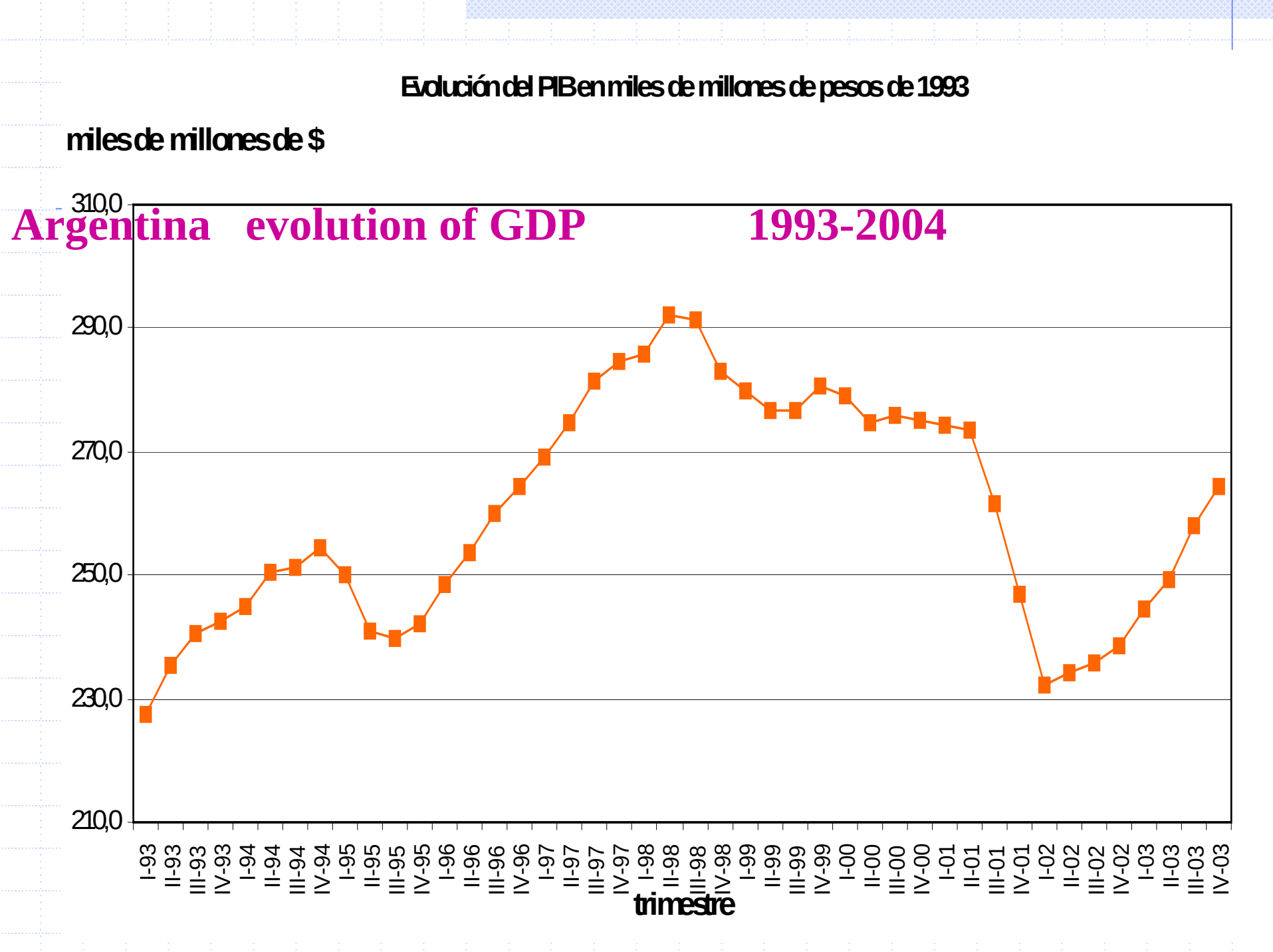
Set of institutions

2004

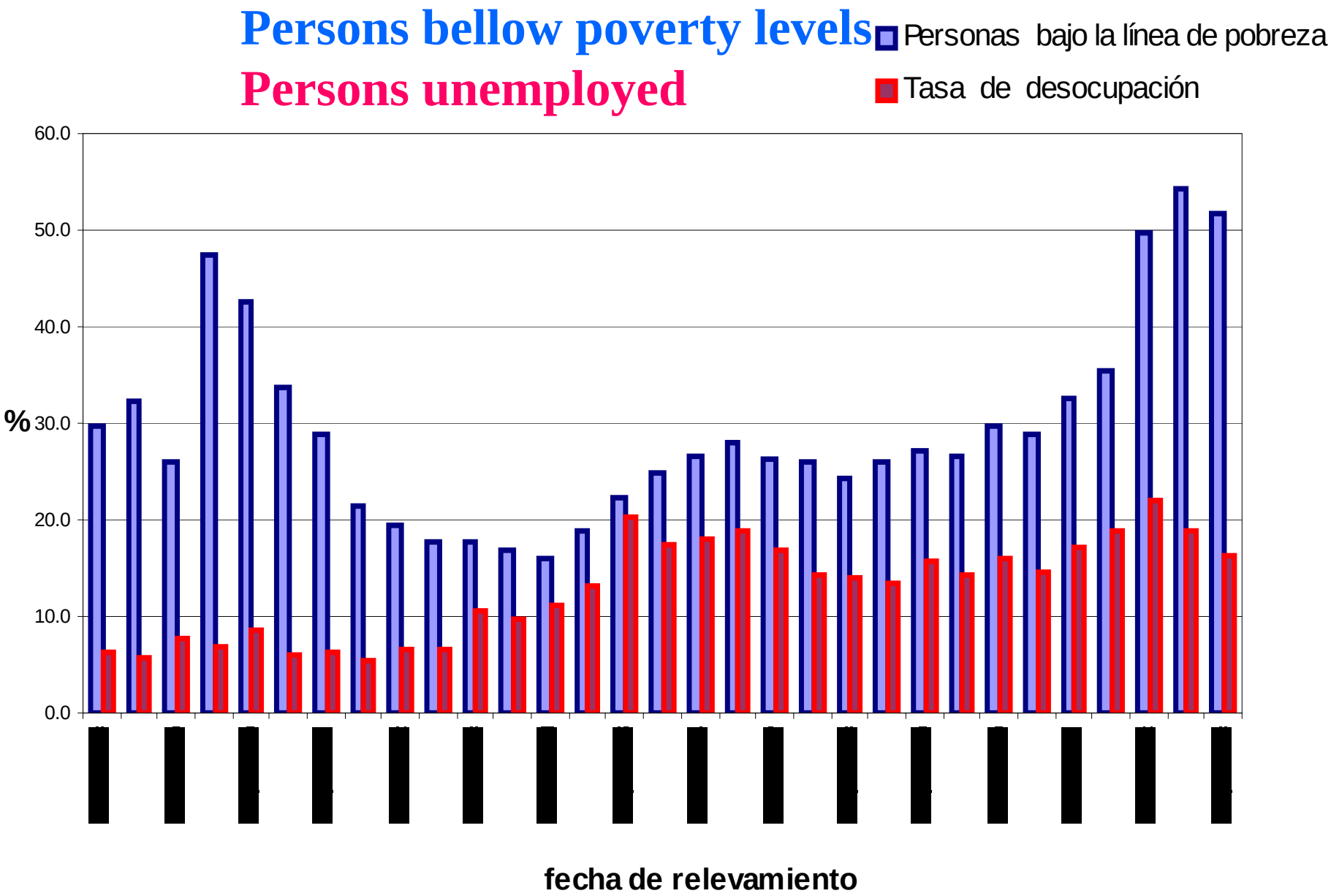
Argentina

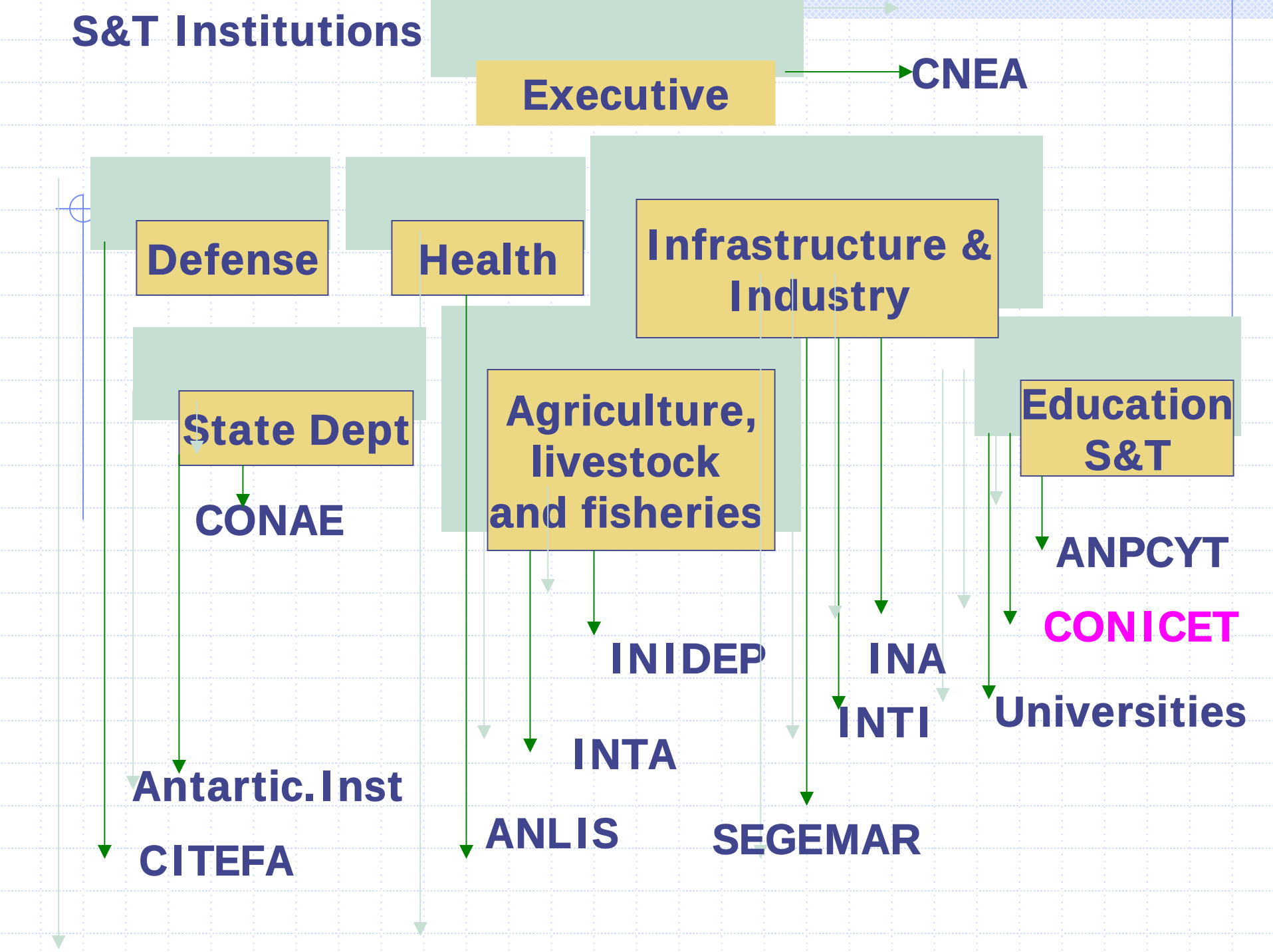
	1995	1998	1999	2003
Surface area (sq km)	2.8 mill			
Population, total	34.8 mill	36.1 mill	36.6 mill	37.5 million
Population density (people per sq km)	12.7	13.2	13.4	
Population growth (annual %)	1.3	1.3	1.2	
Life expectancy at birth, total (years)	72.7	..	..	
Mortality rate, infant (per 1,000 live births)	22.2	19.1	17.6	
Urban population (% of total)	87.5	87.9	88.1	
Illiteracy rate, adult male (% of males 15+)	3.6	3.3	3.2	

Economy	Argentina	1995	1998	1999	2003
GDP at market prices (current US$)		258.1 billion	299.1 billion	283.7 bill	100 bill
GDP growth (annual %)		-2.8	3.9	-3.4	7
GNI, Atlas method (current US$)		256.5 billion	290.1 billion	276.9 bill	
GNI per capita, Atlas method (current US$)		7,380.0	8,030	7,570	2,800
Exports of goods and services (% of GDP)		9.6	10.4	9.8	15
Imports of goods and services (% of GDP)		10.1	12.9	11.5	8
Overall budget deficit, including grants (% of GDP)		-1.2	-1.5	-2.9	


Evolución del PIB en miles de millones de pesos de 1993
miles de millones de $
Argentina evolution of GDP 1993-2004
310,0
290,0
270,0
250,0
230,0
210,0
I-93
II-93
III-93
IV-93
I-94
II-94
III-94
IV-94
I-95
II-95
III-95
IV-95
I-96
II-96
III-96
IV-96
I-97
II-97
III-97
IV-97
I-98
II-98
III-98
IV-98
I-99
II-99
III-99
IV-99
I-00
II-00
III-00
IV-00
I-01
II-01
III-01
IV-01
I-02
II-02
III-02
IV-02
I-03
II-03
III-03
IV-03
trimestre

Evolución de la pobreza y la desocupación en el GBA desde 1988 en adelante




S&T Institutions
Executive
CNEA
Defense
Health
Infrastructure & Industry
State Dept
Agriculture, livestock and fisheries
Education S&T
CONAE
ANPCYT
CONICET
INIDEP
INA
INTA
INTI
Universities
Antartic.Inst
ANLIS
SEGEMAR
CITEFA

SEGEMAR Geological and Mining Survey of Argentina

Main programs：

- **Regional mapping**
- **Airborne geophysics**
- **Regional geochemistry**
- **Metallogenic mapping**
- **Hazards mapping**
- **Environmental base-line maps**
- ***Technological consultancy on quarries or calculation of reserves,***
- ***Geological and Geotechnical studies of mineral deposits (in and off-mine site tests, projects)***
- ***Investment evaluation through project development and operation***

ANLIS
DR CARLOS G. MALBRAN

NATIONAL ADMINISTRATION OF HEALTH LABORATORIES AND INSTITUTES

NATIONAL ADMINISTRATION OF HEALTH LABORATORIES AND INSTITUTES

National Institute of **Infectious Illnesses**

National Institute of **Elaboration of Biological Products**

National Institute of **Human Viral Illnesses**

National Institute of **Parasitology**

National Institute of **Epidemiology**

National Institute of **Respiratory Illnesses**

National Center for **Nutritional Research**

National Center for **Medical Genetics**

National Center for the **Diagnosis and Research of Endemics and Epidemics**

Laboratories Network of Argentina

National Center of **Quality Control of Biological Products**

Armed Forces Institute for Scientific and Technical Research

1 The Only R&D joint organization in the Defense Area

33.000 m2 Facilities, Labs and Workshops

536 Staff

8 International agreements (participation and support)

18 Projects supported by the Armed Forces

20 Agreements with National Organizations

376 Scientists and technicians in the Scientific Staff Regime

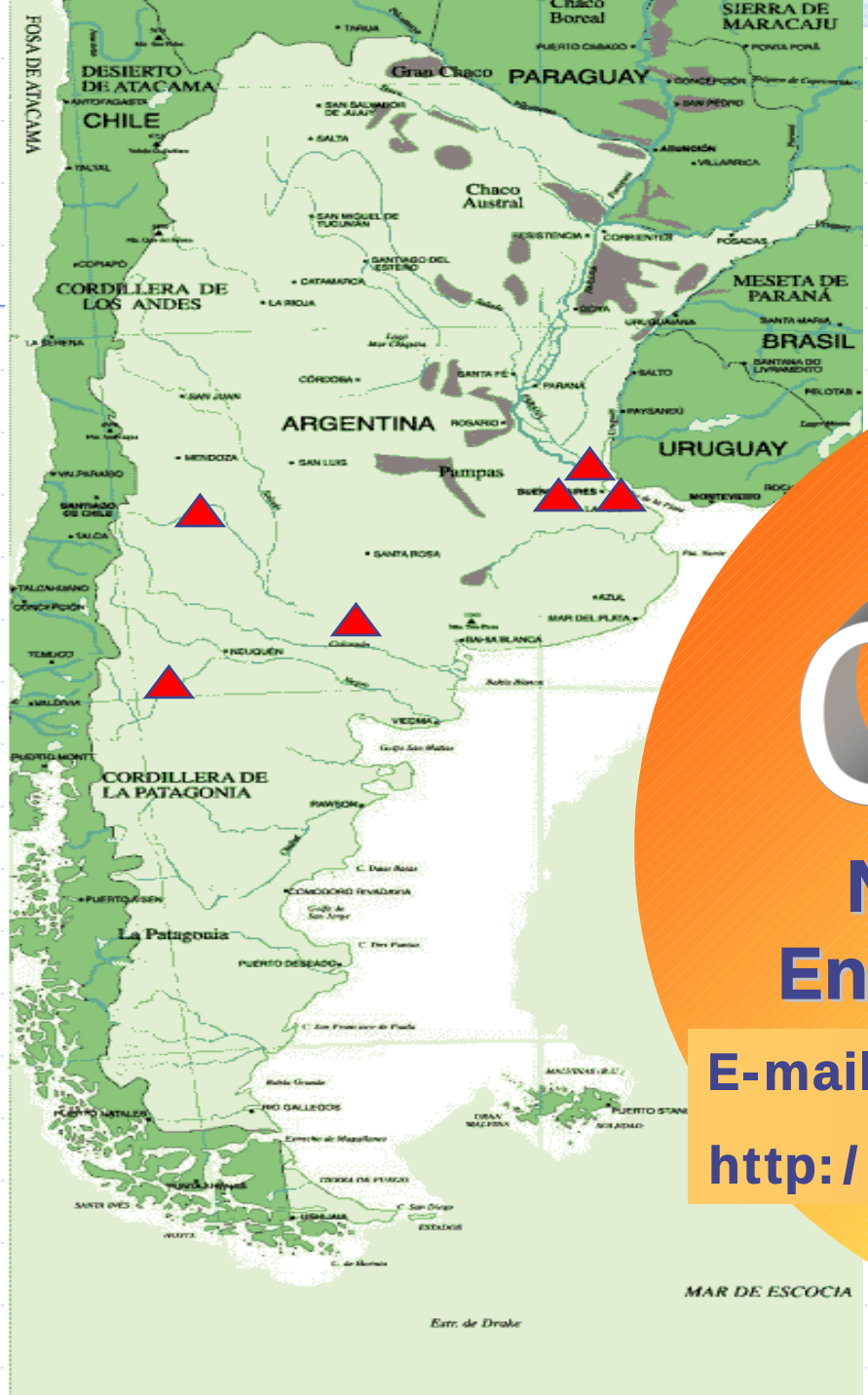
26 Projects supported by other Organizations

23 Technological and Scientific facilities

CITEFA Research Fields :

- Artillery
- Rockets and Missiles
- Control and Guidance
- Applied Chemistry
- Applied Electronics
- Microelectronics
- Night vision ; sensors
- Telemetry
- Antennas
- Lasers
- Environmental testing
- Material Sciences
- Corrosion
- Toxicology
- Plague Control

CITEFA participates in National and International Control Organizations



ATOMIC ENERGY COMISSION

CENTERS AND PLANTS

CNEA

National Atomic Energy Commission

E-mail: webmaster@cnea.gov.ar

http://www.cnea.gov.ar

Constituyentes Atomic Center

- Materials Science
- Nuclear Fuels
- Physics
- Chemistry
- Radiobiology
- Non Destructive Testing
- Heavy Ion Accelerator: 20 MV

Personnel : 990

Ezeiza Atomic Center

RA 3 Reactor 5 MW –10 MW

Radioisotopes Production

Agricultural applications

Food irradiation

Hot Cells

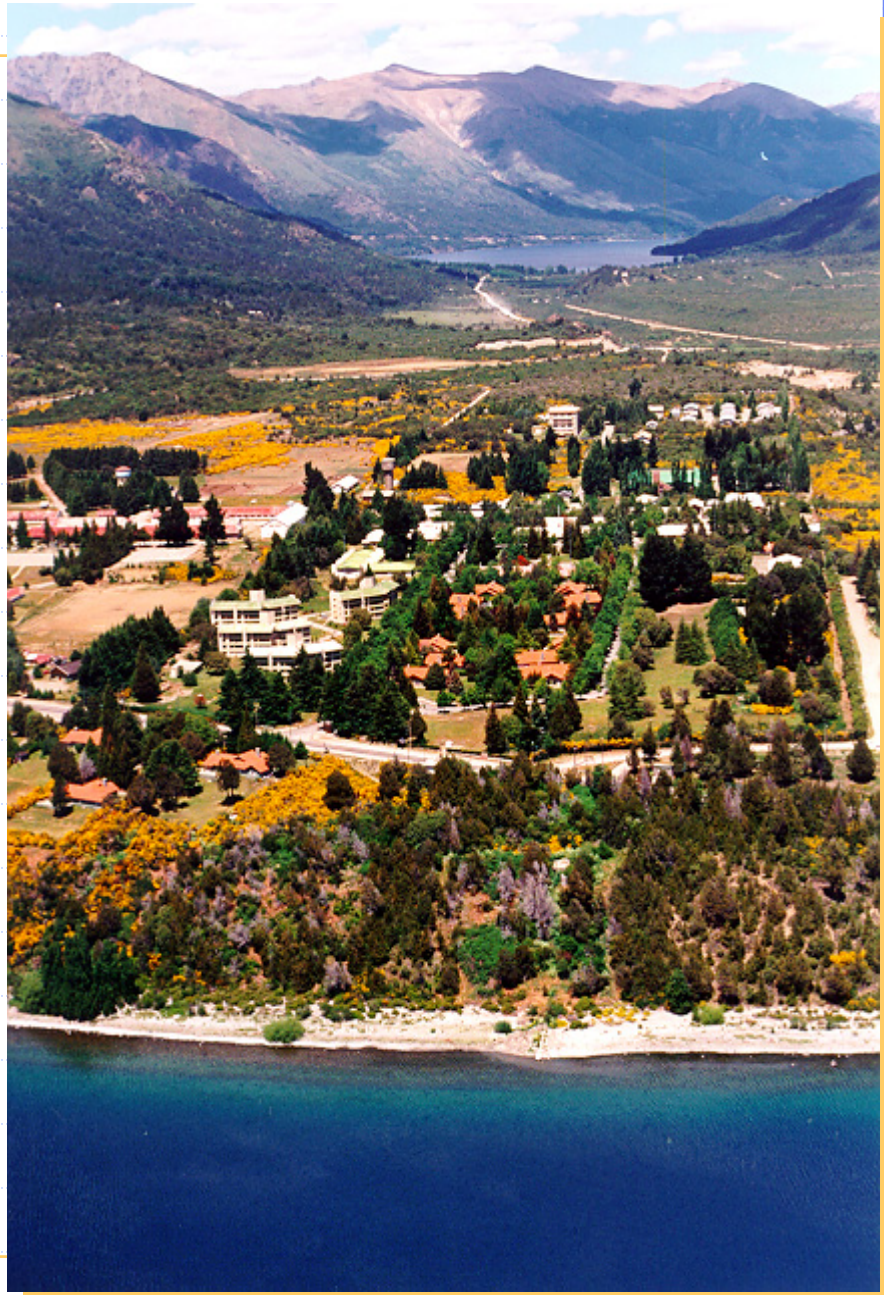
Waste Management

Personnel : 440

Bariloche Atomic Center

- Balseiro Institute
- Physics
- Nuclear Engineering
- Materials Science
- RA 6 Research Reactor (0.5 MW)

Personnel : 430



Related Companies

CNEA share

INVAP

Reactors for reseach & Isotopes production

Nuclear Medicine equipment

Radioisotopes production plants

Aerospace

NA-SA

Nuclear Power Generation

Nuclear contribution to electricity production : 8 % of total

ENSI

Heavy Water production

49 % CNEA

DIOXITEK

UO_2 Production

99 % CNEA

CONUAR

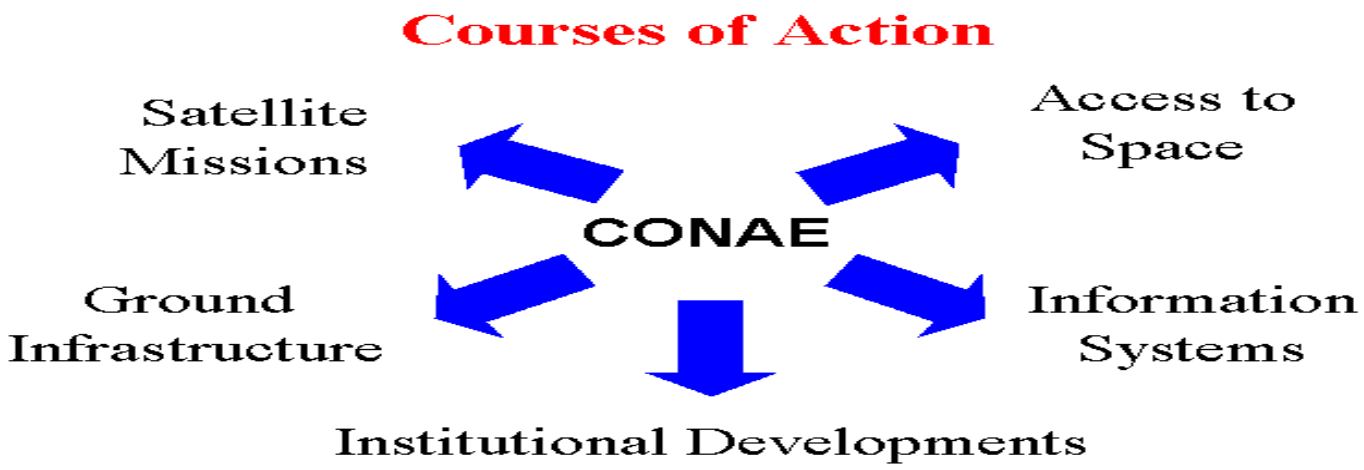
Fuel elements fabrication

33 % CNEA

FUESMEN

Nuclear Medicine Center

NATIONAL COMISSION ON SPACE ACTIVITIES

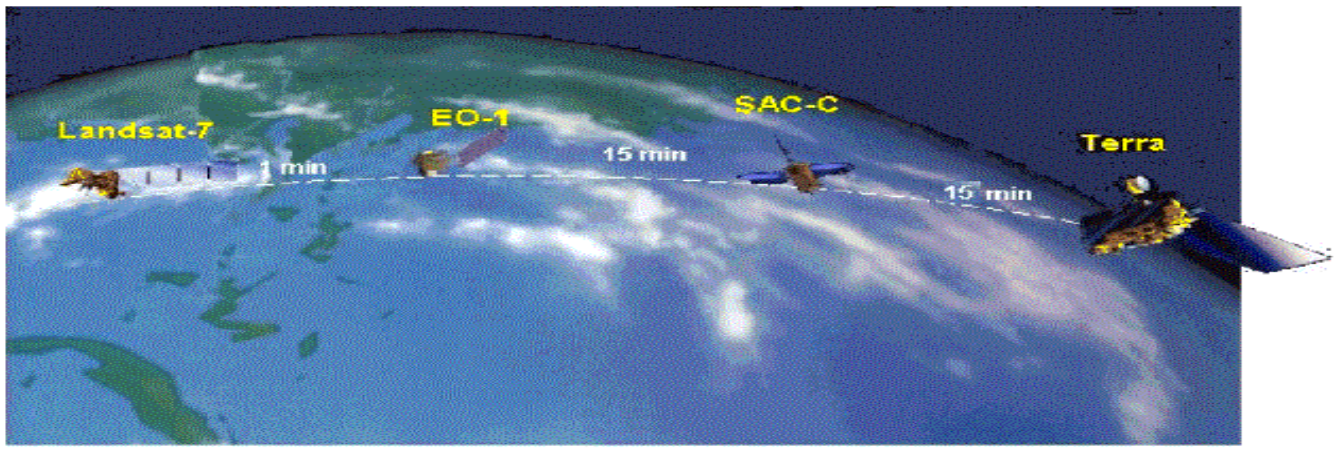


Space Information Cycles for:

- **Agriculture, Fishery and Forestry**
- **Oceanography, Hydrology and Climate. Emergency Manag.**
- **Environmental Studies and Natural Resources.**
- **Geology, Cartography and Mining.**

The "Morning Constellation" formed by the American satellites Landsat 7, Terra, EO1 and the Argentine satellite SAC-C. Detection of a single piece of land "almost" simultaneously with all on board instruments

NASA-CONAE Constellation, EOS-AM

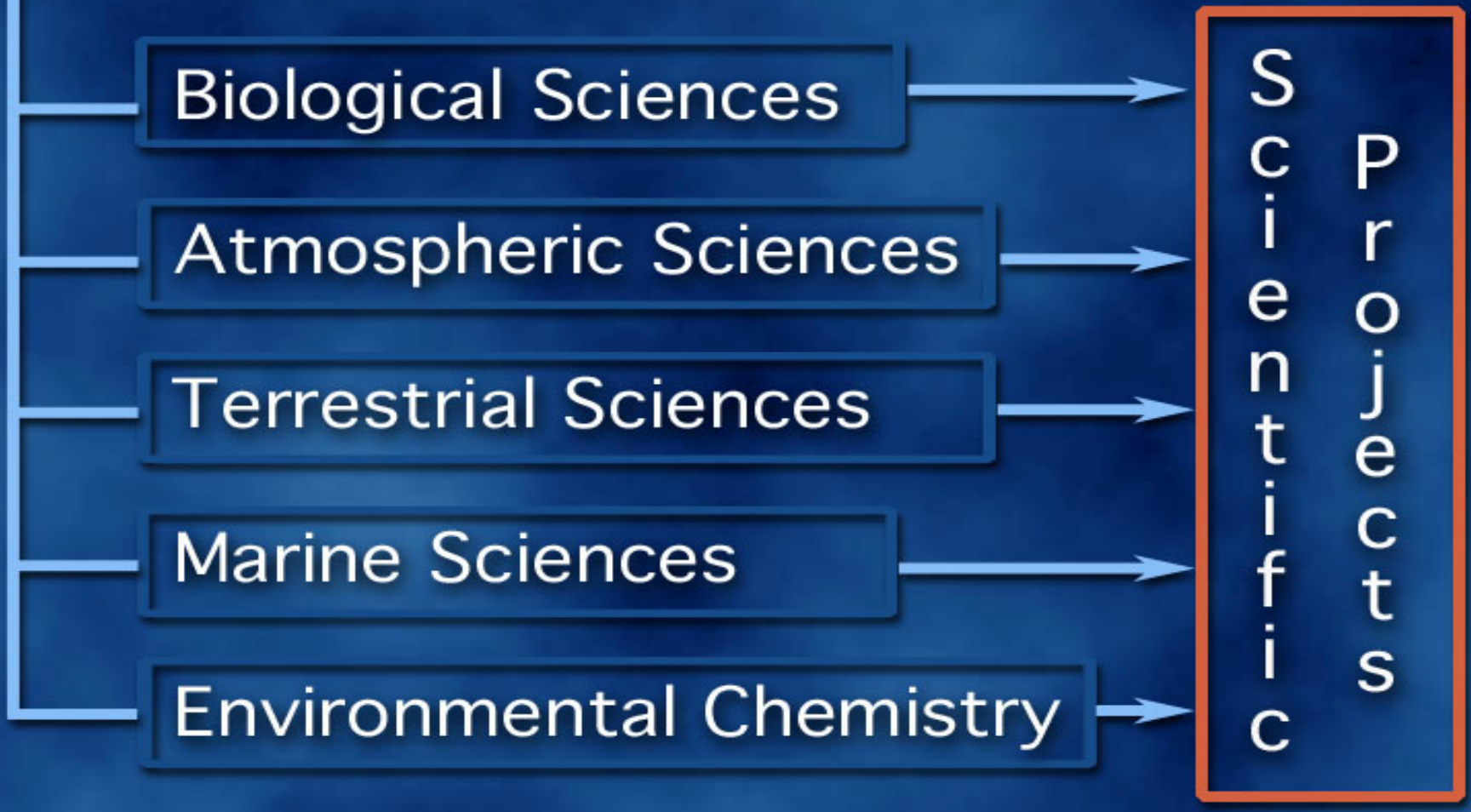


The SIASGE constellation (Italy – Argentine Satellites System for Emergency Management) : four Italian SAR (Radar) satellites in X-band, a constellation of two Argentine SAR satellites in L-band, and a constellation of two optical satellites.

Antartic National Institute – Foreing Affairs Ministry

Main

SCIENTIFIC DEPARTAMENTS



Year Round Stations

Jubany (lat. 62º 14’ S - long. 58º 40’ W)

Orcadas (lat. 60º 44’ S - long. 44º 44’ W)

Esperanza (lat. 63º 24’ S - long. 57º 00’ W)

Marambio (lat. 64º 14’ S - long. 56º 38’ W)

San Martín (lat. 68º 08’ S - long. 67º 06’ W)

Belgrano II (lat. 77º 52’ S - long. 34º 37’ W)

Summer Stations

Brown (lat. 64º 53’ S - long. 62º 53’ W)

Primavera (lat. 64º 09’ S - long. 60º 58’ W)

Decepción (lat. 62º 59’ S - long. 60º 41’ W)

Melchior (lat. 64º 20’ S - long. 62º 59’ W)

Matienzo (lat. 64º 59’ S - long. 60º 07’ W)

Cámara (lat. 62º 36’ S - long. 59º 56’ W)

Petrel (lat. 63º 28’ S - long. 56º 12’ W)

INA National Water Institute

MAIN ACTIVITIES

- High Waters, Floods and Flash Floods
- Erosion and Sedimentation
- Hydraulics of Large Works
- Fluvial, Maritime and Industrial Hydraulics
- Surface and Groundwater Hydrology
- Urban Hydrology
- Irrigation and Drainage
- Hydrological Warning Systems
- Water Economics, Law and Management
- Water Quality and Pollution
- Water Quality in Receiving Bodies and Streams
- Water and Wastewater Treatment
- Environmental Impact Assessment of Hydraulic and Infrastructure Works
- Water Resources Data Base

INIDEP

NATIONAL FISHERIES RESEARCH AND DEVELOPMENT INSTITUTE

Mar del Plata

- 153 researchers, fellowship holders and technicians
- 13 support technicians
- 41 administrative fellows
- 64 research vessel crewmen

Marine Environment , Fishing Gear selectivity and evaluation, Fishery products improvement , Fisheries economics , Satellite Technology for Fisheries , Fishery Information Integrated System .

Argentine National Institute for Agricultural Technology

- 48 experimental stations,
- 240 extension and technology transfer units,
- 12 research institutes
- 12 Regional Centers

Main activities

1. Research and Development

2.- Rural Development , Technology diffusion and transfer (aimed at an integral development of agricultural product chains)

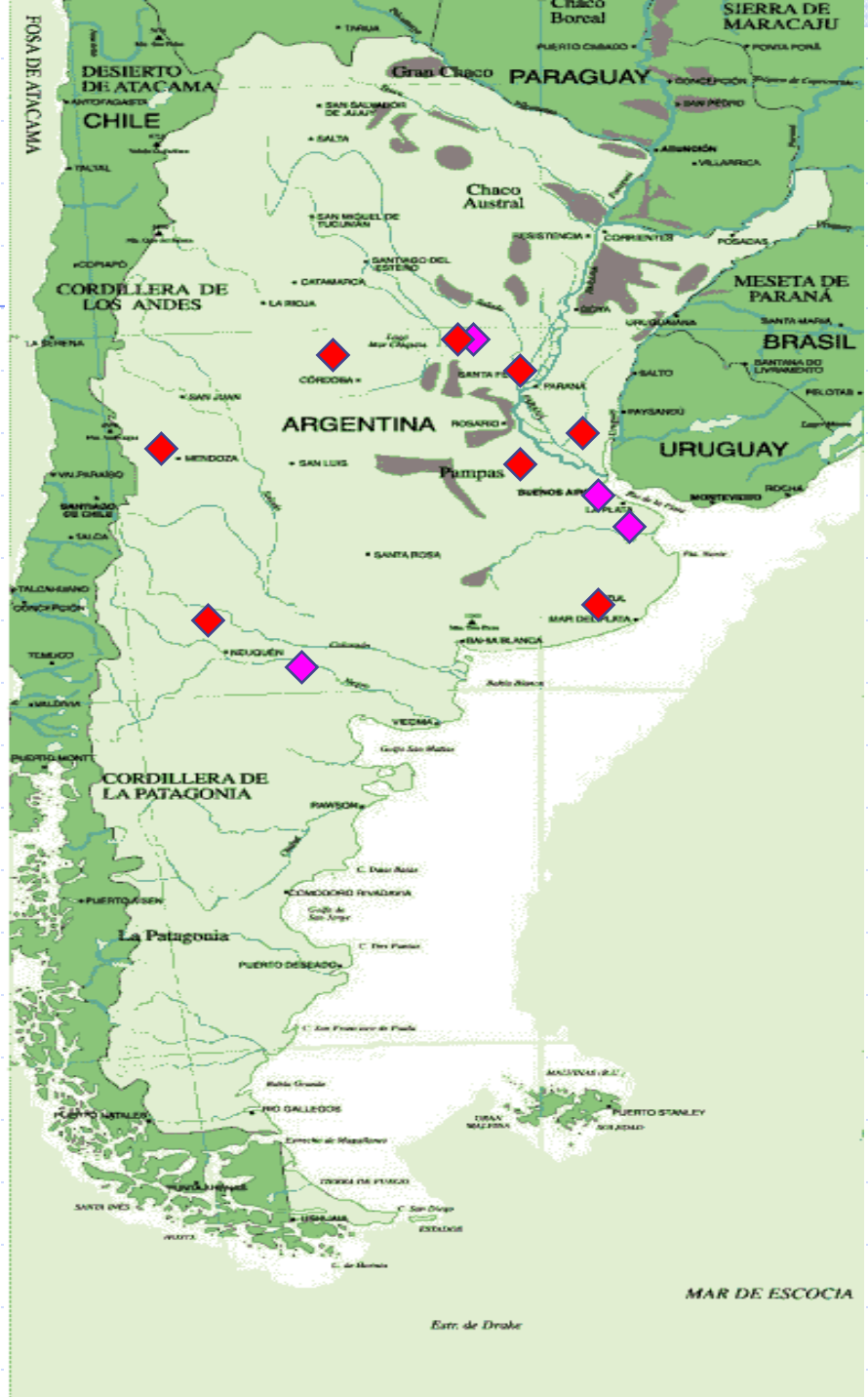
3.- Technical assistance to farmers and firms (training and assistance aimed at the assurance of quality and safety of products and processes)

Disciplinary Research programs :

Animal health
Crop protection and quality
Biotechnology
Environmental management

Programs on food production chains :

Cereals
Oilseeds
Beef and dairy products
Vegetables and Fruits
Forestry products



National Institute of Industrial Technology

INTI

Secretariat of Industry, Commerce and Mining
Ministry of Production

Mercosur

Intl.Coop.

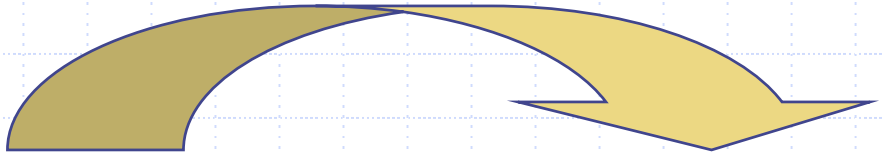
Organizations

Universities

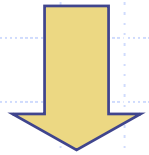
Const.Tech.Pole

Tech. Institutes

Gov. Agencies



INTI Quality assurance – Innovation- Training



Private firms

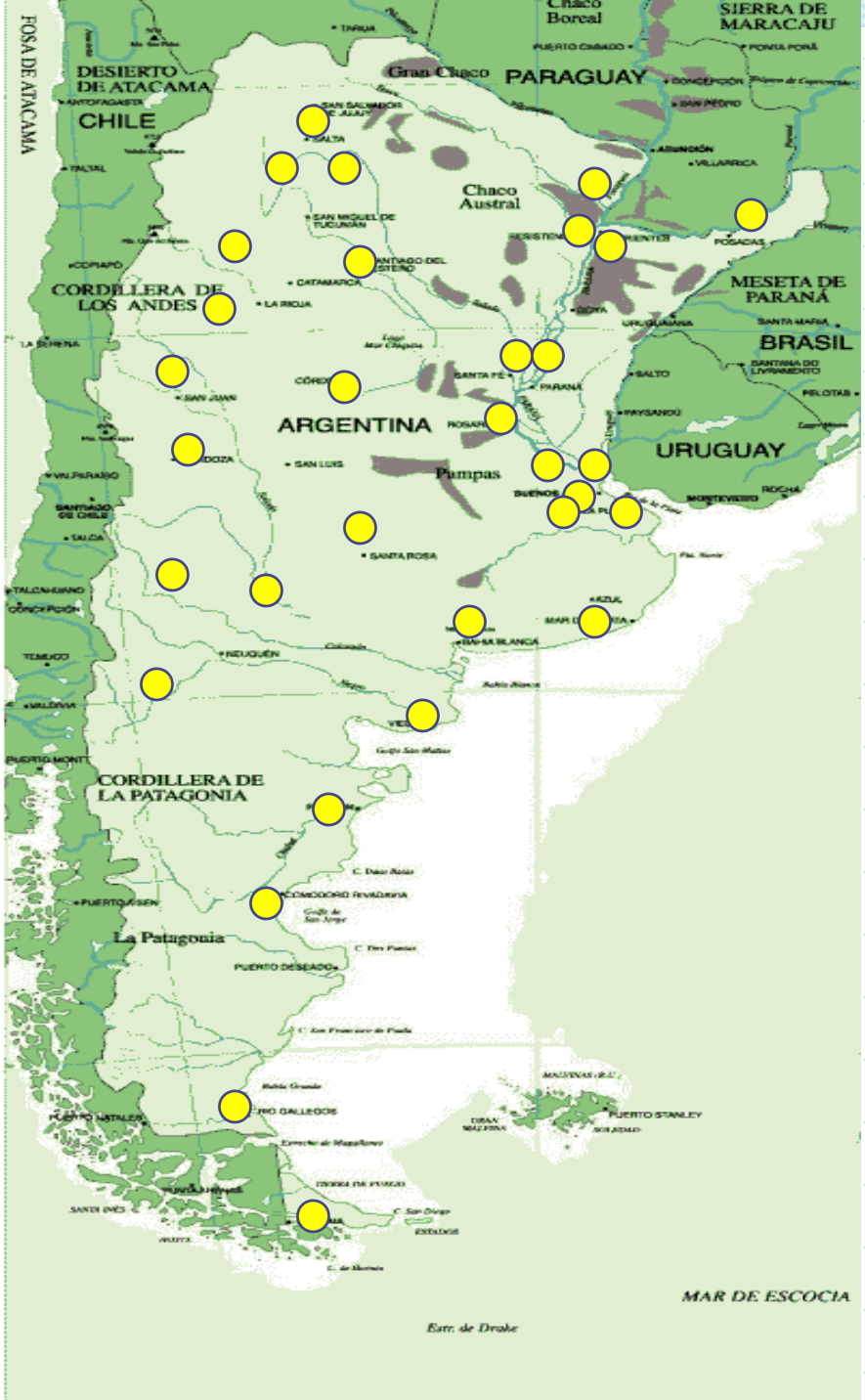
Quality Productivity Markets

Competitiveness Employment

Electronics and Informatics, Chemistry and Petrochemistry

Metrology, Quality , Energy and Environment Food

Materials and Industrial Processes , Construction and Infrastructure



Public Universities

National Public Universities

Autonomous : free election of authorities and administration of assigned resources

Free admission for students

Personnel : 140.000 Professors teachers, instructors

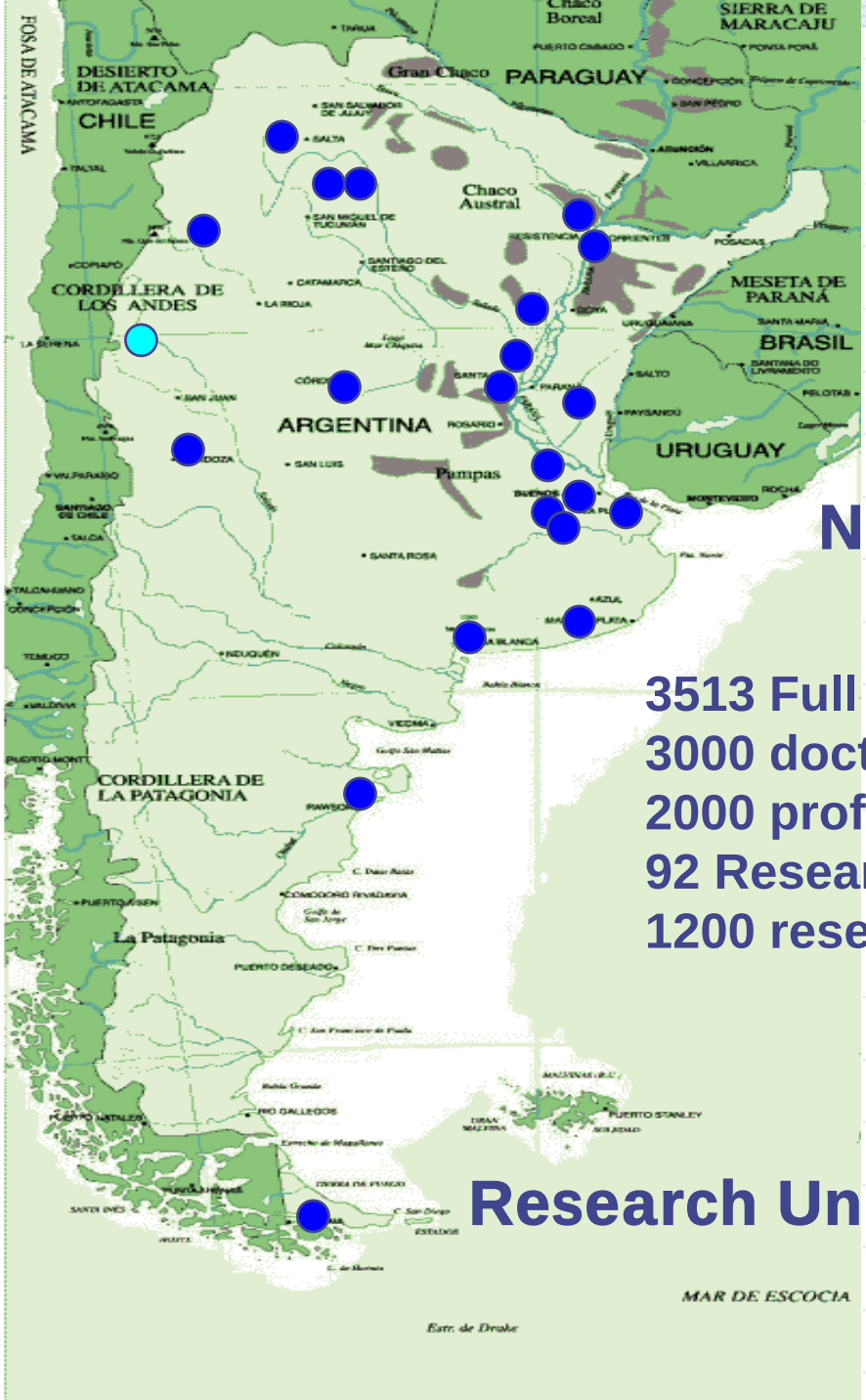
16.000 to 20.000 full time positions, responsible for a considerable contribution to S&T output

500 new PhD. Annually

All Postgraduates programs under National Evaluation

Undergraduate Programs : gradual evaluation beginning with professions of social impact

Validation of degrees : implemented gradually



CONICET
National Research Council

3513 Full time researchers
3000 doctoral and postdoctoral fellows
2000 professional technicians
92 Research Units
1200 research projects

Research Units and Centers CONICET

DISTRIBUTION OF RESEARCHERS BY DISCIPLINARY AREAS

	Amount	%
Biological and Health Sc. Medicine, Biology, Veterinary, Biochemistry	**1209**	**35**
Social Sc. and Humanities Law, Philology, Linguistic, Philosophy, Psychology and Education History, Anthropology y Geography, Sociology y Demography, Economy	**694**	**20**
Physics, Math and Natural Sc. Earth Sc., Mathematics Physics and Astronomy, Chemistry	**1080**	**30**
Agronomical Sc. Engineering and Materials Agronomical Sc, Engineering, Architecture	**530**	**15**
Total	**3513**	**100**

Research fellowships Doctoral - four year term , **efficiency in thesis : 75 %** Post-doct –two year

Type	Co-funding	Number
Doctoral in Argentina		2300
Doctoral abroad (alternate residence)		80
Doctoral	Private firms	10
Post-doctoral	Private firms	30
Doctoral	Universities and S & T Organizations	100
Post-doctoral		400
TOTAL Year 2004		2920

Scientific and technological Researchers

Productivity Index 1993-98

Publications/year/researcher	
Total of researchers of Argentina	0.13 (**)
Res. not members of CONICET	0.05
Researchers of CONICET	0.64 (***)
Researchers in CONICET Research Units	0.84 (***)

Source : (**) Red Iberoamericana de Indicadores de Ciencia y Tecnologia (RICYT-CYTED)(***) CAICyT-CONICET from international databases.

CONICET SHARE

	CONICET	Other Institutions of research
Researchers	**24 %**	**76 %**
Fellowships	**39 %**	**61 %**
Budget	**23 %**	**77 %**
Scientific production (*)	**68 % (**)**	**32 %**

(*) Peer reviewed journals in international databases

(**) 45 % of this production is shared with other institutions , mainly the universities , due to the double affiliation of researchers

Examples of technological success of CONICET in the biotechnology field :

Milk enriched with lactobacillus :

Treatment of children´s intestinal diseases

Developed and patented with SANCOR inc.

Transgenic cows : Production of human Growth Hormone in milk Developed with BIOSIDUS inc.

Recombinant human insuline Developed and patented with BETA inc.

Funding of S&T projects in Argentina

National S&T Funding Agency
Co-financed with IADBank

FONCYT : 500 non oriented R. projects 20.000 U$/year
120 oriented R. projects 50.000 U$/year
scientific meetings and publications

FONTAR : Aprox. 200 innovation projects 50-200.000 U$
These firms "overcame" the crisis – the tax revenue was higher than the cost of the program

CONICET

1200 non oriented R . projects 3.000 U$ / year
plus the funding of associated fellowships
Scientific meetings and publications

DIFFERENT LEVELS in INTERNATIONAL COOPERATION

1. **Peer to peer collaboration** : academic freedom "umbrella" (**AcFr**)

2.- Institution to institution collaboration : AcFr , Focused projects (FcPj) and shared strategies (ShStg)

3.- Government . to Gov. collaboration : FcPj, ShStg, Common problems (Com.Probl)

The institutions or Governments must know the researchers values to influence "their" agenda

Incentives and prestige recognition of new types of contributions must be analysed at the institutional level

3.-Institution to institution collaboration :

4.- Government . to Gov. collaboration :

Institutions and or Governments must articulate their proposed agendas with :

- **Strengths of their research community**
- **Weaknesses capable of being overcome (profit/cost)**
- **Opportunities for intl. recognition (intl. research trends)**

Some examples

- **Argentine-Brazilian Center for Biotechnology CABBIO :**

  Over 120 short courses for 3500 scientists in 12 years

- **NASA-CONAE collaboration : constellation of sattelites**
- **Argentina-Brasil close negotiation for subscription to electronic journal databases.**
- **Bilateral establishment of priorities with NSF and Brazil (initially planned for Workshops …..extended for research?)**
- **Scielo Website for Regional electronic Journals (XML)**

5.- Multilateral collaboration : Global Future Trends in research, new standards and values, “Big Science” Projects.

The framework for specific common agendas is more restricted

- **“Big science” projects**

Gemini Large Scale Telescope

Pierre Auger Laboratory for detection of cosmic radiation

Joint initiatives in the technological area trough the EU Framework Program (IV, V and VI)

- **Few regional initiatives in the Americas for collaboration in technology**

- **Lack of regional approach to common problems : global climatic change , biodiversity, pollution, migrations, health , among others.**

- New standards for better research management

Scienti Network : **Ibero-american** system for publishing and submission of CVs in database format, common definition of evaluation parameters and indicators for individual and institutional performance.

CONICET
National Research Council
ARGENTINA

Latin America Science and Technology Forum
Washington, DC, 15 April 2004

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International Cooperation
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